Exemption No. 8183

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98055-4056

In the matter of the petition of **Northeast Engineering & Development Ltd.** for an exemption from §§ 25.561, 25.562 and 25.785(b) of Title 14, Code of Federal Regulations	**Regulatory Docket No. FAA-2003-15857**

PARTIAL GRANT OF EXEMPTION

By letter dated May 17, 2003, Mr. Bob Carducci, Northeast Engineering & Development Ltd., 26 McEwan Dr., Unit 6, Bolton, Ontario, Canada, L7E 1E6, petitioned for an exemption from §§ 25.561, 25.562 and 25.785(b) of Title 14, Code of Federal Regulations (14 CFR), to the extent necessary to permit certification of medical stretchers for transport of persons whose medical condition dictates such accommodation. The exemption is for an installation on Airbus Model 330-200 series airplanes.

Sections of the Federal Aviation Regulations (FAR) Affected

Section 25.785(b) requires that each seat, berth, safety belt, harness, and adjacent part of the airplane at each station designated as occupiable during takeoff and landing must be designed so that a person making proper use of those facilities will not suffer serious injury in an emergency landing as a result of inertia forces specified in §§ 25.561 and 25.562.

Section 25.562 specifies dynamic test conditions for qualification of occupant injury criteria, as well as structural retention criteria.

Petitioner's Supportive Information

"For temporary hospital berth installations for non-ambulatory occupants, we petition for exemption from FAR 25.785(b) and FAR 25.562 in its entirety for all injury and structural criteria.

"The purpose of the temporary hospital berth is to transport non-ambulatory individuals who cannot travel, for medical reasons, in a normal passenger seat. In most cases, these individuals will be transported for the purpose of receiving needed medical attention.

"The temporary hospital berth is not basic to any Airbus airplane design. When installed, it will be limited to the carriage of medical patients only and will not be used every flight. When the berth is occupied, it will not reduce safety or limit the level of protection provided to the other occupants of the aircraft.

"The berth is normally disassembled and can be carried aboard the aircraft in a stowage compartment or can remain at a base of operation.

"The basic premise for the implementation of FAR 25.562 was to provide an overall increased level of passenger safety by reducing serious injuries which would affect the passengers ability to evacuate the aircraft in a survivable accident. The FAA has evaluated the manufacturing and operational costs associated with installing dynamically tested seats and has determined that the benefits of the increased level of safety is significantly greater than these costs. While this conclusion may be valid for passenger seats which can number up to 379 per aircraft, it is not necessarily valid for a berth installation.

"The FAA and industry has invested sizable resources in research and development in defining FAR 25.562 for the standard passenger, flight deck, and flight attendant seats. None of this research and development addresses the uniqueness of a hospital berth configuration, hence the rule and associated advisory circular (AC) should not be considered applicable. The design and testing costs associated with the certification of a berth installation will be equal to, if not exceed, those of a typical passenger seat installation. The market over which these costs can be spread is so limited that it will drive the unit cost of a berth to a point which will make its installation impractical. The effort involved in producing passenger seat installations that comply with FAR 25.562 benefits the vast majority of passengers on an aircraft. The berth installation, although being used infrequently and only by medical patients in an aircraft, will require an equal or greater level of effort as that associated with a passenger seat installation certification. However, it will yield little or no increase in overall passenger safety.

"The type of injuries that are to be minimized in frequency and severity with the adoption of FAR 25.562 are typically incurred by seated passengers. The subsequent injury criteria that is to be complied with as defined in FAR 25.562 and Advisory Circular 25.562-1A were developed to minimize HIC values, lumbar loading, femur loading, and torso compression. All of these injuries are consistent with seated individuals utilizing upper

torso straps (shoulder harnesses) and/or lap belts when subjected to extreme forward and down loading. The occupant of a berth will be in a supine position and will not be subjected to the specific load paths defined for seated passengers. Enhancing the survivability of the berth occupant through compliance with FAR 25.562 is questionable since these injury criteria were developed for seated occupants coming into contact with adjacent seat rows or fixed bulkheads. Thereafter, the appropriate injury criteria for a non-ambulatory passenger occupying the berth does not exist.

"All loads, both static and dynamic, generated from the berth will be transmitted to the seat tracks. The berth fully complies with the static load requirements defined in FAR 25.561.

"FAR 25.562 states that deformation shall not occur to the extent that it would impede rapid evacuation of the airplane occupants. The berth is located above the outside row of seats against the fuselage sidewall and away from emergency exits. Any deformation of the berth will not affect emergency egress.

"It should be noted that the in-service use of this berth will be limited since it is designed and intended for use by non-ambulatory passengers only. When installed, the berth will eliminate the use of 3 rows of seats except for medical attendants and possibly relatives of the patient. There are no specific restrictions for its usage but the frequency of its use by the airline will be limited by the very nature of its intended use.

"Granting the exemption will allow the Airbus A330-200 series airplanes to be configured to provide affordable transport of non-ambulatory individuals to locations with needed medical facilities. By not granting the exemption, affordable transport of such individuals aboard Airbus A330-200 series commercial flights will be denied. An available alternative would be to charter a private air ambulance. However, the vast majority of the public cannot afford this and thus, without the grant of exemption, access to needed medical facilities may not be readily available.

"Granting the exemption will not reduce safety or limit the level of protection afforded by FAR 25.785(b) and 25.562 to ambulatory passengers or crew.

"We specifically request that the exemption apply to the Airbus A330-200 Series without restriction to specific models."

Publication and Public Comment

On August 18, 2003, the FAA published notice of the petition for exemption in the Federal Register and requested comments from the public. No comments have been received.

FAA's Analysis of the Petition

14 CFR 25.561 is included in the list of regulations from which the petitioner has requested an exemption. However, this appears to be inconsistent with the petitioner's statement that stretchers will fully comply with § 25.561. Previous exemptions of this kind have required that stretcher installations meet § 25.561, and the FAA considers that it is in the public interest to require this regulation to be met in this case also. Because of the apparent inconsistency in the petition, the petitioner was contacted and indicated that § 25.561 should not have been included in the list of regulations from which they have requested an exemption.

The FAA agrees that stretchers for medical use were not considered in the context of the dynamic test requirements of § 25.562 when the regulation was developed. Occupancy of berths during takeoff and landing for ambulatory persons was not considered feasible under the conditions of § 25.562; and for the purposes of compliance, stretchers are considered "berths."

The FAA considers that demonstrating medical stretcher compliance with the requirements of § 25.562 would be very difficult, and applicability of the existing pass/fail criteria to these installations is questionable, since the existing criteria were developed for seats rather than berths.

There is a need for such medical systems on airplanes. Value to the public lies in the fact that such accommodations for air transport for critically ill patients would be available. Without such accommodations, some critically ill people may not be able to receive necessary medical attention, and any safety benefit from averting the possible consequences of a stretcher not meeting the dynamic test requirements is moot in that case.

The FAA has also considered that the use of the stretcher is limited, and on a case-by-case basis. The exposure to the possibility of an accident on any given flight is therefore less than for airplanes in general. Since use of the stretcher for takeoff and landing is limited only to those persons whose medical condition dictates travel in that manner, the FAA does not consider this a precedent-setting finding.

With respect to the overall level of safety, the FAA notes that full compliance with the requirements of § 25.561 will be required for the stretcher. This is consistent with the standards for all seats prior to the adoption of § 25.562. An alternative to this exemption would be for the non-ambulatory person needing transport to seek transportation on an airplane whose certification basis does not require dynamic testing (i.e., an airplane with an earlier certification basis). While this alternative would meet the rule, the FAA does not consider that this is a desirable approach. While differences in certification bases are not sufficient to justify an exemption, the FAA does not consider that safety necessarily would be served by only using an airplane with an earlier certification basis.

The Grant of Exemption

In consideration of the foregoing, I find that a partial grant of exemption is in the public interest, and will not significantly affect the overall level of safety provided by the regulations. Therefore, pursuant to the authority contained in 49 USC 40113 and 44701, delegated to me by the Administrator, the petition of Northeast Engineering & Development Ltd. for exemption from the requirements of 14 CFR 25.562 and 25.785(b) for installation of medical stretchers on Airbus Model 330-200 airplanes is hereby granted, with the following provision:

> Occupancy for takeoff and landing is limited to non-ambulatory persons. Suitable means to identify this limitation shall be provided as part of the stretcher type design.

Issued in Renton, Washington, on November 24, 2003.

/s/Ali Bahrami
Ali Bahrami
Acting Manager
Transport Airplane Directorate
Aircraft Certification Service